R E M A R K S

This amendment is in response to the Office Action mailed on March 5, 2010. Claims 13-14 and 18-29 remain pending. New Claim 30 has been added; no new matter has been added. Support for new claim 30 can be found at least on page 5, lines 21-25 of the specification.

Applicants greatly appreciates the Examiner's indication that claims 21-24, 27 and 28 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims. However applicants have refrained from rewriting these claims and believe they are allowable for the reason noted below.

Claims 13-14, 18-20 and 25, 26 and 29 stand rejected under 35 U.S.C. §102(e) as being anticipated by Baumagarte et al. (U.S. 2003/0003553).

Independent claims 13 and 14 recite the limitations of "the set of spatial parameters including a parameter representing a measure of similarity of waveforms of the multi-channel output signal, wherein the measure of similarity is a function increasing with the dissimilarity of the multi-channel output signal. Applicant respectfully submits that the cited Baumagarte fails to teach or suggest the above limitations.

- 9 -

The Office Action indicates that the limitation of "the set of spatial parameters including a parameter representing a measure of similarity of waveforms of the multi-channel output signal" is shown in Baumagarte in [0073, 0082], applicants respectfully disagree. This section simply teaches a time/frequency transform of the input signal. The Office Action further notes that "frequency is a function of time", but does not indicate how that teaches the above limitations. Accordingly, applicants can find nothing that teaches "the set of spatial parameters including a parameter representing a measure of similarity of waveforms of the multi-channel output signal."

Independent claim 29 recites the limitations of "the set of spatial parameters including a parameter representing a measure of similarity of waveforms of the multi-channel output signal, wherein the measure of similarity a value of a cross-correlation function at a maximum of said cross-correlation function of the multi-channel output signal." Applicant respectfully submits that the cited Baumagarte fails to teach or suggest the above limitations.

Baumagarte discloses a method for simultaneous placement of a number of sources in auditory space, said method depending "only on one combined signal (i.e. a mono signal, see [0013]) with additional side information (auditory scene parameters), see [0082]. Additionally a method for generating the monophonic signal and the auditory scene parameters is disclosed. The auditory scene parameters that are associated with each source signal are interaural level difference (ILD), interaural time difference (ITD)

or HRTS. The ILD and ITD determine the perceived lateral position of a sound source in the horizontal plane, see [0041]-[0044], or as stated in http://en.wikipedia.org/wiki/ITD, ITD is the difference in time of arrival of a sound between e.g. two ears of e.g. a human or animal.

The Office Action indicates that the limitation of "wherein the measure of similarity a value of a cross-correlation function at a maximum of said cross-correlation function of the multi-channel output signal" is shown in Baumagarte in [0074]. Applicants respectfully disagree. This section teaches that the cross-correlation value between the converted left and right audio signals can be used in deriving the spatial parameters e.g. ILD and ITD. Nothing therein teaches a "measure of similarity... *cross-correlation function* of the multi-channel output signal", as claimed.

As further described in the specification (page 5, line 21-25) of the present invention, "a set of spatial parameters: two localization cues (ILD, and ITD or IPD) **and** a parameter that describes the similarity or dissimilarity of the waveforms that cannot be accounted for by ILDs and/or ITDs (e.g., the maximum of the cross-correlation function) preferably for every time/frequency slot. Preferably, spatial parameters are included for each additional auditory channel." Thus, Baumagarte's use of a cross-correlation between the converted left and right audio signals in [0074] does not teach limitation of "the measure of similarity a value of a cross-correlation function at a maximum of said cross-correlation function of the multi-channel output signal," but only uses the cross

correlation for deriving the ITD/ILD parameters, (e.g. the localization cues) and not the parameter that describes the similarity or dissimilarity of the waveforms…as claimed.

Claim 18 recites the limitations of "a decorrelator unit (401) for generating from the composite digital signal a decorrelated version of the composite digital signal, a matrixing unit (403) for receiving the composite digital signal and the decorrelated version of the composite digital signal and generating therefrom a replica of the first and second digital audio signal component,…" Applicants can find nothing in Baumagarte that teaches these limitations.

The Office Action indicates that the above limitations of are shown in Fig. 7, item 704; [0067]. Applicants respectfully disagree. In this section Baumagarte teaches that the "auditory scene synthesizer 704 of FIG. 7 applies different sets of specified level and time differences to the different dominated frequency bands in the combined signal to generate the left and right audio signals…" Nothing therein teaches a "decorrelated version of the composite digital signal." As further described in the specification on page 19, lines 25-34 the decorrelator does not simply apply different sets of specified level and time differences to the different dominated frequency bands in the combined signal, but instead:

> Fig. 4 illustrates a decorrelator for use in the synthesizing of the audio signal. The decorrelator comprises an all-pass filter 401 receiving the monoaural signal x and a set of spatial parameters P including the interchannel cross-correlation r and a parameter indicative of the channel difference c. It is noted that the parameter c is related to the interchannel level difference by $ILD = k \cdot \log(c)$, where k is a constant, i.e. ILD is proportional to the logarithm of c.

Preferably, the all-pass filter comprises a frequency-dependant delay providing a relatively smaller delay at high frequencies than at low frequencies. This may be achieved by replacing a fixed-delay of the all-pass filter with an all-pass filter comprising one period of a Schroeder-phase complex (see e.g. M.R. Schroeder, "Synthesis of low-peak-factor signals and binary sequences with low autocorrelation", IEEE Transact. Inf. Theor., 16:85-89, 1970). The decorrelator further comprises an analysis circuit 402 that receives the spatial parameters from the decoder and extracts the interchannel cross-correlation r and the channel difference c

Further nothing in Baumagarte teaches "generating therefrom a replica of the first and second digital audio signal component." Again, Baumagarte teaches "level and time differences are applied symmetrically to the spectrum of the combined signal to generate the spectra of the left and right audio signal according to Equations (4) and (5)…"

Next the Office Action indicates that the limitations of "the replica of the first digital audio signal component being a linear combination of the composite digital signal and the decorrelated version of the composite digital signal, using multiplier coefficients that are dependent of the parameter signal, the replica of the second digital audio signal component being a linear combination of the composite digital signal and the decorrelated version of the composite digital signal, using multiplier coefficients that are dependent of the parameter signal" are "implicit." Applicants respectfully disagree.

Nothing in Baumagarte teaches these limitations. The Office Action seems to acknowledge what is further lacking in the cited reference, in that it concludes that "...that these limitations are [not shown but is] implicit…" Moreover, where is the suggestion

- 13 -

found in Baumagarte? If the suggestion is not there, why would someone of ordinary skill in the art decide to modify in the claimed manner?

Where a feature is not shown or suggested in the prior art references themselves, the Federal Circuit has held that the skill in the art will rarely suffice to show the missing feature. Al-Site Corp. v. VSI International Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999) (Rarely, however, will the skill in the art component operate to supply missing knowledge or prior art to reach an obviousness judgment).

Thus, it is not seen how the above statement that the above limitations are implicit..., without improper hindsight by "use[ing] the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention," see *In Re Denis Rouffet,* 47 USPQ.2d 1453, 1457-58 (Fed. Cir. 1998). The Federal Circuit in *In re Rouffet* stated that virtually all inventions are combinations of old elements. Therefore an Examiner may often find many elements of a claimed invention in the prior art. To prevent the use of hindsight based on the invention to defeat patentability of the invention, the Examiner is required to show a motivation to modify the references to justify a finding of obviousness. Applicants respectfully submit that the Examiner has not met this burden.

The only suggestion that can be found anywhere for making the modification appears to come from the present patent application itself.

How can the Office Action espouse that the modification forwarded does not include knowledge gleamed only from the applicants disclosure? If this reconstruction did not come from the present application, where did it come from? The reconstruction and modification certainly did not come from the prior art. Even the Office Action does not point to any portions of the prior art for teaching the suggestion reconstructions/modification as pointed out above.

In consideration of the use of improper hindsight for rendering a claim obvious in light of prior art, the Federal Circuit has stated that "to draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction - an illogical and inappropriate process by which to determine patentability." (Sensonics, Inc. v. Aerosonic Corp., 81 F.3d 1566, 38 USPQ2d 1551 (Fed. Cir. 1996). "To imbue one of ordinary skill in the art with knowledge of the invention ensued, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." (In re Zurko, 111 F.3d 887, 42 USPQ2d 1476 (Fed. Cir. 1997). "A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field (cited reference omitted). Close adherence to this methodology is especially important in

- 15 -

cases where the very ease with which the invention can be understood may prompt one 'to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher (cited references omitted).'" (In re Kotzab, 208 F.3d 1352, 54 USPQ2d 1308 (Fed. Cir. 2000).

Applicants would like to bring to the Examiners' attention well established case law that clearly shows that the court frowns on such use of hindsight, examples of such cases being as follows:

The Supreme Court in Calmar, Inc. v. Cook Chemical Co., 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966), in which the Court warns the dangers of "slipping into hindsight", citing the case of Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co., 332 F.2d 406, 141 U.S.P.Q. 549 (6th Cir., 1964), where the doctrine is stated (emphasis added):

> We now come to the patented device which after all is the subject matter of this case. At the outset we take note of two well-established principles.   The first is that in considering the questions of obviousness, we must view the prior art from the point in time prior to when the patented device was made. <u>Many things may seem obvious after they have been made and for this reason courts should guard against slipping into use of hindsight</u>. We must be careful to "view the prior art without reading into that art the teachings of appellant's invention." Application of Sporck, 301 F.2d 686, 689 (C.C.P.A).

It is accordingly respectfully submitted that the apparatus of claim 18 is not anticipated or made obvious by the teachings of the cited references. Based on the

foregoing, the Applicants respectfully submit that independent claim 18 is patentable over the cited references and notice to this effect is earnestly solicited.
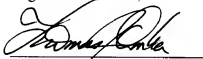
Since Baumagarte does not teach all of the limitations of independent claims 13-14, and 18 it cannot render the present invention unpatentable. For at least the above cited reasons, Applicant submits that Claims 13-14 and 18 are patentable over Baumagarte. Independent claims 29 and 30 also recite limitations noted above, and thus is patentable for at least the same reasons.

With regard to dependent claims 19-28 these claims depend from one of independent claims discussed above, which have been shown to be allowable in view of the cited references. Accordingly, claims 19-27 are also allowable by virtue of their dependence from an allowable base claim.

For all the foregoing reasons, it is respectfully submitted that all the present claims are patentable in view of the cited references. Entry of this amendment and a Notice of Allowance is respectfully requested.

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Date: April 30, 2010

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